

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claims 1-9 (canceled).

10. (Previously presented) An apparatus comprising:

a holding member having a cross sectional length that is greater than a cross sectional width and a central opening;

a vibratable member comprising a piezoelectric transducer that is configured to vibrate upon application of an electrical signal, wherein the vibratable member has a cross sectional length that is greater than a cross sectional width and is coupled to the holding member outside of the central opening with the length of the vibratable member being parallel to the length of the holding member;

a plate body operably coupled to the vibratable member by the holding member such that the plate body is disposed across the central opening, the plate body having a top surface, a bottom surface, and a plurality of apertures extending from the top surface to the bottom surface, wherein each aperture is defined by a tapered portion which tapers inward from the bottom surface toward the top surface and a flared portion that extends from the top surface toward the bottom surface and that flares away from the tapered portion, and wherein the flared portion and the tapered portion share an axis of symmetry such that when a liquid is supplied to the bottom surface and the aperture plate is vibrated using the vibratable member, liquid droplets are ejected through the flared portion, wherein the plate body is electroformed to produce the apertures, and wherein the tapered portion at an intersection with the flared portion has a size in the range from about 1 micron to about 10 microns.

11. (Previously presented) An apparatus as in claim 10, wherein the plate body is constructed from materials selected from a group consisting of palladium, palladium nickel and palladium alloys.

12. (Previously presented) An apparatus as in claim 10, wherein the plate body includes a portion that is dome shaped in geometry.

13. (Previously amended) An apparatus as in claim 10, wherein the plate body has a thickness in the range from about 20 microns to about 70 microns.

14. (Previously presented) An apparatus as in claim 10, wherein the apertures have an exit angle that is in the range from about 41° to about 49°.

Claims 15-30 (canceled).

31. (Previously presented) An apparatus comprising:
a holding member having a cross sectional length that is greater than a cross sectional width and a central opening;

a vibratable member comprising a piezoelectric transducer that is configured to vibrate upon application of an electrical signal, wherein the vibratable member has cross sectional length that is greater than a cross sectional width and is coupled to the holding member outside of the central opening with the length of the vibratable member being parallel to the length of the holding member;

a plate body operably coupled to the vibratable member by the holding member such that the plate body is disposed across the central opening, the plate body having a top surface, a bottom surface, and a plurality of apertures extending from the top surface to the bottom surface, wherein the apertures each include an upper portion and a lower portion, wherein the lower portion extends upwardly from the bottom surface and is generally concave in geometry, and wherein the upper portion is tapered in a direction from the top surface to the bottom surface and intersects at an intersection with the lower portion which flares outward such that when a liquid is supplied to the top surface and the aperture plate is vibrated using the vibratable member, liquid passes through the upper portion and is ejected through the lower portion as liquid droplets, wherein the plate body is electroformed to produce the apertures, and wherein the upper portion at the intersection has a size in the range from about 1 micron to about 10 microns.

32. (Currently amended) An apparatus as in claim 31, wherein the upper portion has an angle of taper that is in the range from about 30° to about 60° at the intersection with the lower portion, and a diameter that is in the range from about 1 micron to about 10 microns at the intersection with the lower portion.

33. (Currently amended) An apparatus as in claim 32, wherein the lower portion has a diameter at the lower surface that is in the range from about 20 microns to about 200 microns, and a height in the range from about 4 microns to about 20 microns.

34. (Previously presented) An apparatus as in claim 31, wherein the bottom surface is adapted to receive a liquid, and wherein the plate body is vibratable to eject liquid droplets from the front top surface.

Claims 35-36 (canceled).

37. (Previously presented) An apparatus as in claim 10, wherein the flared portion has a height that is approximately one-third of the thickness of the plate body.

38. (Previously presented) An apparatus as in claim 10, wherein the plate body has a thickness of at least about 20 microns.